

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-10. (Cancelled).

11. (Original) A UV detection system, comprising:
an optical system, the optical system capable of focusing incident radiation;
a UV crystal filter having a pass band in a desired spectral region, the UV crystal positioned to receive focused incident radiation from the optical system; and
a radiation detection system sensitive to radiation in at least the pass band of the UV crystal filter, the radiation detection system positioned to receive radiation transmitted through the UV crystal filter.
12. (Original) The system of Claim 11, wherein the desired spectral region includes radiation having a wavelength of between about 200 nm and about 350 nm.
13. (Original) The system of Claim 11, wherein the optical system includes filters that filter out radiation having wavelengths above those in the desired spectral region.
14. (Original) The system of Claim 13, wherein the UV crystal filter
a host crystal that is transparent within at least the desired spectral region; and at least one dopant incorporated within the host crystal;
wherein the at least one dopant provides optical absorption bands such that the crystalline filter has the pass band within the desired spectral region.
15. (Original) The filter of claim 14, wherein the transparent host material is chosen from the group consisting of MgF_2 , CaF_2 , SrF_2 , BaF_2 , ZnF_2 , and CdF_2 .
16. (Original) The filter of Claim 15, wherein the at least one dopant includes a fluoride compound dopant.

17. (Original) The filter of Claim 16, wherein the fluoride compound includes a lanthanide or actinide fluoride, wherein the lanthanide or actinide is chosen from the group of elements consisting of Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, and U.

18. (Original) The filter of Claim 16, wherein the at least one dopant further includes second dopant compound of the lanthanide or actinide forming one of a nitride compound, an oxide compound, a boride compound, a carbide compound or a hydroxide compound.

19. (Original) The filter of Claim 14, wherein the host material is CaF_2 and the at least one dopant includes CeF_3 and CeN .

20. (Original) The filter of Claim 14, wherein the host material is CaF_2 and the at least one dopant includes CeF_3 , CeN , EuF_3 and EuN .

21. (Original) The filter of Claim 14, wherein the host material is CaF_2 and the at least one dopant includes CeF_3 and CeC_2 .

Claims 22-75. (Cancelled).